

Abstract

A pure vacuum swing adsorption/desorption system and method, unique apparatus means wherein supplied air feedstock gas mixtures of molecular gases can be is consistently separated to obtain with a high-purity oxygen end-product gas mixture obtained with a minimum system consumption of electrical power, is described. In the particular case of air separation, the described system and unique apparatus means herein provides a method by which a The system and method separate high-purity oxygen product can be separated from air within by sequenced adsorption and desorption operations occurring exclusively under vacuum pressure conditions. This allows for to obtain greatly reduced kilowatt-hours of electric power consumption per hourly or daily oxygen ton production rates produced.

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A pure vacuum swing adsorption/desorption system and method, wherein supplied air feedstock gas is consistently separated to obtain a high-purity oxygen end-product gas mixture, is described. The system and method separate high-purity oxygen product from air by sequenced adsorption and desorption operations occurring exclusively under vacuum pressure conditions. This allows for greatly reduced kilowatt-hours of electric-power consumption per oxygen ton produced.